

LINEAR PHASE ROBUST CARRIER RECOVERY FOR QAM MODEMS.

ABSTRACT OF THE DISCLOSURE.

In a QAM demodulator including an adaptive equalizer, a method of carrier tracking comprising the following steps is disclosed: (A) sampling a QAM signal received from a transmission channel; (B) recovering a symbol clock function from the sampled QAM signal; (C) applying the sampled QAM signal to the adaptive equalizer in order to obtain a QAM equalized signal in a Blind Equalization (BE) mode; (D) using a slicer to locate a nearest plant point for the QAM Blind equalized signal for each recovered symbol clock; (E) using a complex conjugate multiplier to obtain an instantaneous inphase component and an instantaneous quadrature component of a phase angle error signal; (F) using a linear phase detector to obtain an instantaneous phase angle error for each symbol clock; (G) averaging the instantaneous phase angle error signal by using a carrier loop filter; (H) using a complex multiplier to insert an inverse of the averaged phase angle error signal into the QAM Blind equalized signal to compensate for the carrier phase angle error; and (I) repeating the steps (D-H) to close a carrier frequency loop.